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United States Department of Agriculture,

BUREAU OF CHEMISTRY,

H. W. WILEY, Chief.

COOPERATIVE WORK ON THE UNIFICATION OF TERMS FOR REPORT- ING ANALYTICAL RESULTS, ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS, 1906.

In September, 1905, 500 copies of a preliminary report of the Committee on the Unification of Terms for Reporting Analytical Results were distributed to experiment station, State, and municipal chemists, in which all those receiving it were urged to present their opinions regarding the recommendations made and to criticise the report in detail. In a matter of this nature it is obvious that there are many questions which might be solved equally well in any one of a variety of ways. The particular solution that shall be chosen must often depend on the probability of its being generally adopted. Before the association can take intelligent action upon the matter, therefore, it should know in detail the idea of those interested in the subject.

This is a matter which there will not be time to discuss carefully at the association meeting, and it is the desire of the committee to compile the opinions of the members of the association and others interested in the same field before presenting its final report. Unfortunately, the former requests of the committee for opinions on this subject were almost entirely without result. Only two of those addressed made any definite criticism or suggestion. I am therefore writing again to urge you to carefully study the report mentioned (if you have misplaced your copy, another will be sent you) and to criticise it in as great detail as possible. We, of course, do not desire from any member the simple statement that he approves of the recommendations of the committee. It is not expected that anyone will approve of all of the recommendations. In fact, I may say that no member of the committee does.

Your attention is especially called to the following points:

(1) There are two radically different systems of nomenclature suggested for soil and ash analyses.

(2) There are a number of important questions under the caption "General considerations" on page 6 of the circular, and your opinion is urgently requested regarding each of them. For instance, the question is raised regarding the temperature at which specific gravity should be determined. It is suggested that the acidity and alkalinity of all products, and of the ash of those products, be expressed in terms of the number of cubic centimeters of normal alkali or acid necessary to neutralize 100 grams (or cubic centimeters) of the substance or of its ash, *using phenolphthalein as indicator*.

This one sentence affords opportunity for a variety of opinions. It is probable that some exceptions should be made to that general statement; for instance, the

alkalinity of the ash could probably better be expressed in terms of decinormal alkali in 100 grams of the sample. On the other hand, the acidity of vinegar might best be expressed, as is usually done, in terms of the per cent of acetic acid. It is now customary to express the volatile acids in wine as acetic acid, using phenolphthalein as indicator, and the total acids as tartaric, using litmus as indicator. A change to phenolphthalein in total acids in wine would probably be advantageous.

Again, the use of phenolphthalein in determining the alkalinity of the ash is objected to by many because of the acidity to phenolphthalein of the phosphates present. This point is very important in itself. In any case, we should adopt one indicator for the alkalinity of the ash of all substances. At present some of our methods specify methyl orange and others phenolphthalein.

(3) Another question is, Should all determinations be represented by their chemical terms, such as sulphur trioxid rather than sulphuric acid, calcium oxid rather than lime, and aluminum oxid rather than alumina? If this should be adopted as a rule, should we except from the general rule potash and phosphoric acid because of the prevalence of the use of those terms in connection with fertilizers? Undoubtedly the report of the committee should be so harmonized as to express the same compound always by the same term.

(4) It is probable that the term "water" rather than "moisture" should be used in reporting analyses. It has also been suggested that in the analysis of distilled liquors, volatile acids, fusel oil, aldehydes, esters, and furfurol shall be expressed in terms of either absolute alcohol or proof spirits.

The committee believes that every chemist receiving the report can aid materially in this work by writing out his criticisms in detail and forwarding them to the chairman. No member is expected to criticise the whole field, but each one is earnestly requested to express his opinion in as great detail as possible regarding those questions with which he is thoroughly conversant.

Respectfully,

R. J. DAVIDSON,

*Chairman of the Committee on
the Unification of Terms for Reporting Analytical Results.*

AGRICULTURAL EXPERIMENT STATION,

Blacksburg, Va., February 10, 1906.

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